

# TV

## OPERATIONS MANUAL



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Starkey Hearing Technologies TV is designed to stream audio from electronic audio sources directly to your 2.4GHz wireless hearing aids. The TV device can be successfully connected to many electronic audio sources, including televisions, computers, MP3 players, DVD players and cable boxes.

The TV device can concurrently stream audio to an unlimited number of users, allowing them to share the same listening experience.

**Streaming** – Audio or sound transmitted wirelessly from the TV device directly to your hearing aids

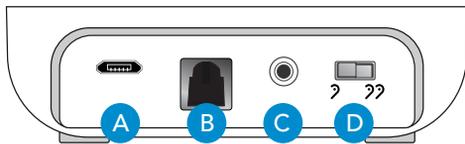
### Package Contents

- Starkey Hearing Technologies TV
- Power Adapter
- Optical Toslink Cable
- 3.5mm to RCA cable
- Operations Manual

### Typical Setup



## Overview



- A. **Power Supply Jack:** A power adapter is provided.
- B. **Optical TOSLINK Jack:** A TOSLINK cable is provided.
- C. **Analog Jack:** 3.5mm-to-RCA cable is provided.
- D. **Mono/Stereo Switch**
  -  (MONO) – select if you wear one hearing aid
  -  (STEREO) – select if you wear two hearing aids



 : Powers Starkey Hearing Technologies TV on and off

 : Pair with hearing aids

**+** and **-** : To increase the audio stream volume, press the "+". To decrease the volume, press the "-".

**Tip:** Stream Volume can also be adjusted via the Thrive™ Hearing Control app, Starkey Hearing Technologies Remote, and/or hearing aid user controls. Review your hearing aid operations manual or contact your hearing professional for details on your particular system setup.

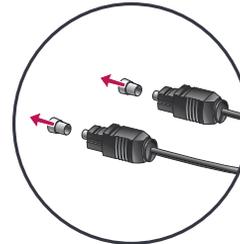
**LED:** Provides helpful information about the TV device.

| LED           | CURRENT STATE  |
|---------------|--|
| Off           | Power is off   |
| Solid Green   | Power is on, but not streaming audio   |
| Solid Blue    | Power is on and streaming audio  |
| Blinking Blue | Hearing aid pairing mode is active. <i>For more details, refer to <b>Pairing</b> section on page 11.</i> |
| Solid Red     | Possible fault condition   |

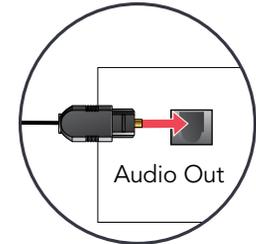
## Basic Use

To quickly start using Starkey Hearing Technologies TV with a typical setup:

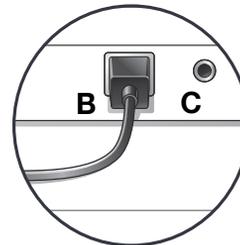
1. Remove the plastic caps from both ends of the TOSLINK cable.
2. Attach a TOSLINK cable into the Audio OUT jack on your electronic audio source. Power on your electronic audio source.
  - **Note:** If there is no TOSLINK audio OUT jack, try a different electronic audio source or try the 3.5mm to RCA cable.
3. Attach the other end of TOSLINK cable to the rear of the TV device (jack B).
4. Plug the power adapter into the wall socket.
  - **Note:** If the power adapter does not have the proper plug configuration, refer to **Assembling the Power Adapter** section on page 14.
5. Insert the power adapter microUSB connector into the rear of the TV device (jack A).
6. Press the power button on the TV device to turn it on.



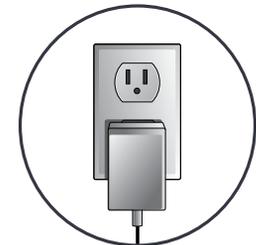
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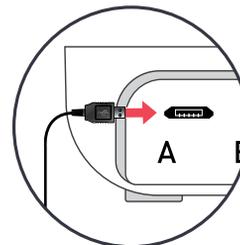
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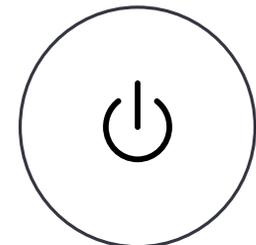
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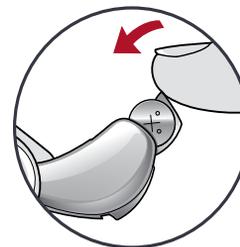
- If the front LED glows solid blue, then the TV device has detected audio and is streaming.

**Tip:** If the LED remains solid green, recheck your setup or review Troubleshooting section.

- Ensure your hearing aids are powered on.
  - Note:** Prior to streaming audio for the first time, your hearing aids will need to be paired to the TV device. Refer to the **Pairing** section on page 11.
- To start streaming audio,
  - Open Thrive Hearing Control and select the option to Start Streaming from the TV device.
  - Refer to **Start/Stop Audio Streaming** section on page 13 for additional options.
- Press the +/- button on the TV device to adjust the stream volume.
- To stop streaming, do one of the following:
  - Open Thrive Hearing Control and select Stop Stream from the TV device.
  - Turn off the TV device (🔌).
  - Refer to **Start/Stop Audio Streaming** section on page 13 for additional options.



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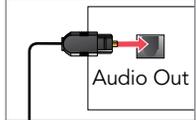
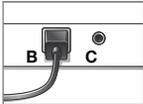
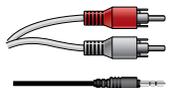
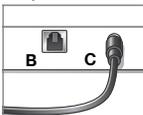
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## Connecting to Audio Sources

There are different ways to attach an audio source to Starkey Hearing Technologies TV. Carefully examine an electronic audio source to determine which AUDIO OUT options it offers.

|   | Insert cable into the AUDIO OUT jack on your electronic audio source  | Attach the other end of cable to the rear of the TV device  |
|---|---|---|
|  <p>Optical TOSLINK</p>     |  <p>Audio Out</p>  | <p>Use jack B</p>  |
|  <p>Analog RCA to 3.5mm</p> |  <p>Audio Out</p> <p><b>Note:</b> Connect the red-to-red and white-to-white.</p> | <p>Use jack C</p>  |

**Tip:** During initial setup, a solid blue LED confirms the audio cable is properly attached to the TV device and audio streaming is active.

## Pairing

For Starkey Hearing Technologies TV to interact with your hearing aid(s), you must first pair the TV device with each hearing aid. You only need to perform this action one time, as they should automatically recognize each other when both are powered on and within wireless operating range.\*

To pair the TV device with your hearing aid(s):

1. Ensure your hearing aids are not connected to nearby Bluetooth devices. To do this,
  - Disable Bluetooth on your mobile phone.
  - Power off any nearby Starkey Hearing Technologies TV or Remote Microphone + accessories, which you previously paired to your hearing aids.
2. Power off, then power on your hearing aids.
3. Place your hearing aids within 15cm [6 inches] of the TV device.

\*Typical operating range is up to 15 meters (~50 feet). Operational range may be reduced by environmental factors, such as obstructions, interference, and human body positioning. Larger operational distances are achievable, though audio quality and connectivity may decrease.

4. Press the  button on the TV device. The front LED will begin blinking blue. Audio streaming will be temporarily stopped during this step.
5. For a **set of** hearing aids:

| First LED blink | Second LED blink | Pairing Result              | Next Step          |
|-----------------|------------------|-----------------------------|--------------------|
| 1               | 2                | Both hearing aids paired    | Complete           |
| 1               | 2                | Only one hearing aid paired | Repeat steps 1 – 5 |
| 1               | n/a              | No hearing aids paired      | Repeat steps 1 – 5 |

6. For a **single** hearing aid:

| LED blink | Pairing Result | Next Step                |
|-----------|----------------|--------------------------|
| 1         | Successful     | Complete                 |
| 1         | Unsuccessful   | Repeat steps 1 – 4 and 6 |

## Start/Stop Audio Streaming

Audio streaming from Starkey Hearing Technologies TV may be started (or stopped) in a variety of ways:

- **Thrive Hearing Control** – Open the App on your mobile phone or tablet. Select the option to Start/Stop Streaming.
- **Starkey Hearing Technologies Remote** – If preconfigured by your hearing professional, press the Favorite button (  ).
- **Hearing aid user control** – If preconfigured by your hearing professional, a specific gesture (e.g. a Long Press on a Push Button) can start/stop streaming.

Audio streaming will also stop when:

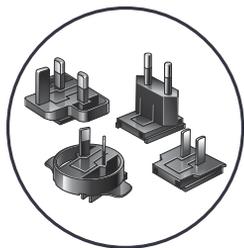
- An incoming audio signal is not detected.
- The TV device is turned off.

An audible indicator may play in your hearing aids to signal the start/stop of audio streaming.

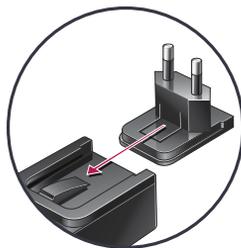
## Assembling the Power Adapter

Starkey Hearing Technologies TV may include a variety of plug configurations for use in different countries. If the power adapter requires assembly:

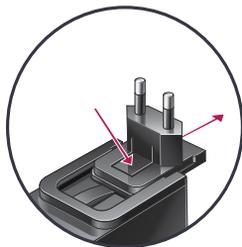
1. Select the appropriate plug configuration used in your country.
2. Slide the plug onto the power adapter until it snaps into place.
3. To remove the plug, press the tab and slide the plug away from the cable.



1



2



3

## Troubleshooting

| SYMPTOM  | POSSIBLE CAUSES  | SOLUTIONS   |
|--|--|---|
| One (or both) hearing aids unexpectedly drops out of audio streaming.    | Hearing aids may be on the edge of wireless range.                     | Move closer to the TV device.   |
|  | Battery level in hearing aid can no longer support audio streaming.    | Replace hearing aid battery with new one.   |
|  | The TV device may not be positioned for optimal streaming.             | Re-orient the TV device spatially by turning a few degrees to right or left.                          |
|  | Large object, such as furniture or a wall, may be degrading signal.    | For best performance, your hearing aids should be within line-of-sight of the TV device.              |
| LED is solid blue, but no streamed sounds are heard in the hearing aids. | Hearing aids are not within wireless range.                            | Move closer to the TV device.   |
|  | Audio stream needs to be manually started to be heard in hearing aids. | Manually start the audio stream via your Thrive Hearing Control, remote, or hearing aid user control. |
|  | Hearing aids are not paired with the TV device.                        | Refer to <b>Pairing</b> section to associate your hearing aids with the TV device.                    |

| SYMPTOM   | POSSIBLE CAUSES   | SOLUTIONS  |
|---|---|--|
| I expect to hear audio streaming, but my LED is solid green.    | Audio cable may be connected to “audio IN” on electronic audio source.  | Ensure the cable is plugged into “audio OUT” jack on the electronic audio source.  |
|   | No incoming audio signal is available.  | Turn on the electronic audio source.   |
|   | Electronic audio source output is not correct format.   | Set the digital output on your electronic audio source to PCM or Dolby Audio.  |
| LED is solid red.   | Possible error condition.   | Remove power adapter from jack A, wait 5 seconds and reinsert power adapter.   |
| Streamed audio is not synchronized with the television picture. | Many new televisions (such as HDTVs) take a long time to process the video signal, so they may delay the audio to maintain synchronization. | <ul style="list-style-type: none"> <li>• Try using another audio output jack (which may require a different type of cable) on your television.</li> <li>• Try using another electronic audio source. For example, if currently using cable box, try the audio OUT on a television or vice-versa.</li> <li>• Some electronic audio sources (such as televisions or A/V receivers) have a built-in option to adjust the timing sequence of audio and video.</li> </ul> |

## Safety Information

### Intended Use

Starkey Hearing Technologies TV is an accessory to a wireless air conduction hearing aid. It is intended as a wireless transmitter of sound from a television or other electronic audio source directly to an air conduction hearing aid.

The TV device is designed to comply with the most stringent Standards of International Electromagnetic Compatibility. However, it is still possible that you may experience interference caused by power line disturbances, electromagnetic fields from other medical devices, radio signals and electrostatic discharges.

The TV device is designed to be cleaned with a damp cloth moistened with soapy water.

If you use other medical devices or wear implantable medical devices such as defibrillators or pacemakers and are concerned that your TV device might cause interference with your medical device, please contact your physician or the manufacturer of your medical device for information about the risk of disturbance.

The TV device should be stored within the temperature and humidity ranges of -40°C (-40°F) to +60°C (140°F) and 10%-95% relative humidity.

The TV device is designed to operate indoors in the range of temperatures from 0°C (32°F) to 40°C (104°F).

We are required by regulations to provide the following warnings:

**WARNING:** Use of the TV device directly next to other electronic equipment should be avoided because it could result in improper performance. If such use is necessary, note as to whether your hearing aids and the other equipment are operating normally.

**WARNING:** Use of accessories, components or replacement parts other than those provided by the manufacturer of your TV device could result in increased electromagnetic emissions and decreased electromagnetic immunity and could result in degradation of performance.

**WARNING:** If Portable Radio Frequency communications equipment is used closer than 30 cm (12 inches) from your TV device, degradation of the performance of your hearing aid could result. If this occurs, move away from the communications equipment.

Although the TV device is not formally certified (IP rated) for protection against dust or water ingress, per IEC 60529, it has been tested to the IP 5X level. This means that the TV device is protected from dust.

The TV device does not contain any user-serviceable parts. Do not open or modify it.

Do not connect the TV device to any devices not described in this manual.

The expected service life of the TV device is 5 years.

## Wireless Technical Description

Starkey Hearing Technologies TV operates in the 2.4- 2.4835 GHz band with a maximum effective radiated power of 21 dBm (North America), 10 dBm (rest of world) with transmission modulation type of GFSK and 2 MHz bandwidth. The receiver section of the radio has a bandwidth of 2 MHz.

The TV device has been tested to, and has passed, the following emissions and immunity tests:

- IEC 60601-1-2 radiated and conducted emissions requirements for a Group 1 Class B device as stated in CISPR 11.
- Harmonic distortion and voltage fluctuations affecting the power input source as stated in Table 2 of IEC 60601-1-2.
- RF radiated immunity at a field level of 10 V/m between 80 MHz and 2.7 GHz as well as higher field levels from communications devices as stated in Table 9 of IEC 60601-1-2.
- Immunity to power frequency magnetic fields at a field level of 30 A/m.
- Immunity to ESD levels of +/- 8 kV conducted discharge and +/- 15 kV air discharge.
- Immunity to electrical fast transients on the power input at a level of +/- 2 kV at a 100 Hz repetition rate.
- Immunity to surges on the power input of +/- 1 kV line to line.
- Immunity to conducted disturbances induced by RF fields on the power input as stated in Table 6 of IEC 60601-1-2.
- Immunity to voltage dips and interruptions on the power input as stated in Table 6 of IEC 60601-1-2.

## Regulatory Notices

FCC ID: EOA-24TV

IC: 6903A-24TV (Models 800 and 801)

### FCC/IC Notice

This device complies with part 15 of the FCC rules and with Industry Canada's license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation of the device. Users are cautioned that a 20 cm (8 inch) minimum separation distance must be maintained from the device to insure compliance with FCC and ISED Canada RF exposure requirements.

**NOTE:** The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

### Note FCC/IC

Cet appareil est conforme à la partie 15 des règles de la FCC et avec les normes RSS de licence d'Industrie Canada. Le fonctionnement est soumis à deux conditions: (1) Cet appareil ne doit pas causer d'interférences nuisibles et (2) cet appareil doit accepter toute interférence reçue, y compris les interférences qui peuvent causer des fonctionnements du dispositif. Les utilisateurs sont avertis qu'une distance de séparation minimale de 20 cm (8 pouces) doit être maintenue depuis l'appareil pour assurer la conformité aux exigences d'exposition RF de FCC et d'ISED Canada.

**NOTE:** Le fabricant n'est pas responsable de l'interférence créée par la modification de cet équipement lors de l'écoute du téléviseur ou de la radio. De telles modifications pourraient entraîner la révocation de l'autorité de l'utilisateur à opérer cet équipement.

Hereby, Starkey Hearing Technologies declares that Starkey Hearing Technologies TV is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU. A copy of the Declaration of Conformity can be obtained from the following addresses and from [docs.starkeyhearingtechnologies.com](https://docs.starkeyhearingtechnologies.com)



